

A survey on “the role and importance of IoT in education sector”

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Abstract: Internet of things (IoT) is a rapidly growing network. It has brought new challenges, opportunities and possibility for the improvement of education scenario. This paper tries to discuss about the role, importance, merits, challenges, new projects and impact of IoT in the future of education. Internet of things and education can be mutually beneficial fields.

I. INTRODUCTION

Today, the real times around us are smarter, due to advanced technology. IoT plays a vital role to develop the things smarter. IoT is a new method to connect the different objects around with internet. IoT technology is becoming an important part in learning and teaching methodologies. It allows establishing a rapid communication between the students and faculties in the classroom.

IoT plays a vital role in building a commonly usable different web based platforms. IoT is defined as network connectivity. It is basically a network of several devices which are attached with software, electronics and network connectivity of distinct orientation, aimed at exchanging and compiling of any kind of information.

II. ROLE AND IMPORTANTS OF IOT IN EDUCATION

IoT is defined as a combination of all the real world things and various information devices, all of which are connected as a united network, where all are digital. There are two models of IoT:

a) Dimensional model IoT

It is established to classify the complicated IoT technologies.

b) Layer model IoT

It is built for future IoT system architecture.

IoT plays an important role in educational sector. IoT increases awareness about many scientific phenomena. It reduces the workload of teachers and provides more information for students rather than grasping information in classroom. IoT enhances the student's performance through interactive software-e-book; portable and convenient sources enable the students more equipped and mapped. IoT also improves the communication between learners and teachers. It also reduces the educational arts.

III. MERITS OF USING IOT IN EDUCATION

a) Wireless storage of lessons, assignments etc.

b) Increased students performance

c) Enhanced relationships among students and facilitator

d) Availability and mobility

e) Increased connectivity

IV. CHALLENGES OF IOT IN EDUCATION

There is a compatibility needed between one device and the other. Integration should be maintained in one with the other. There is no single standard for all the IoT applications. Another difficulty regarding IoT is security. IoT network is large; it consists of many devices that connect to each other. As a result, it is easier for the hackers to hack any one of the device and lead to failure in the functioning of the whole network. This situation can be handled by using strong firewalls.

V. APPLICATIONS

a) Digital highlighters and interactive boards.

Students can communicate with educators using devices such as digital highlighters and interactive boards. This device allows the students to find out their own solutions.

b) Quick Response (QR) codes.

QR codes help the students to scan the information. Knowledge becomes easily available to students when they scan QR codes.

c) Radio-Frequency Identification(RFID chips)

RFID provides a tracking mechanism. RFID helps the educators and parents to track the students. It works on the basis of cloud, GSM and GPRS helps to track the students' details.

d) Interactive/collaborative work area

Wristbands with RFID tags read the information about users and allow the students a common workplace. Internet of things helps the students to gain knowledge function new things and interacts with teachers and students and provides an open forum discussion between students and outside professors.

e) Temperature sensors

An advanced temperature sensor in IoT allows institutions to monitor different temperature condition in any situation.

f) Attendance tracking

It helps the institution to ensure students security. It helps to minimize the time to submit data and allow educators to send an electronic message to parents.

g) Security

IoT provides different security measures to ensure campuses security. Facial recognition helps to detect all the strangers' entering the campuses.

VI. IoT based Projects

a) EdModo

This EdModo project helps the students, teachers and parents. It provides coaching classes, communication classes etc. With the help of EdModo, teachers can share information about notes, assignments, tests etc. Teachers can communicate with parents and students.

b) Nymi

Nymi wristbands are used for tracking students. This project was developed by Bionym Company. The device helps simplicity roll call since teachers can see information about all students in their tablet. A signal from wristband goes to a tablet when a student enters the institution.

c) C-Pen

C-Pen brand represent portable scanners that are aimed at students and instructor. Using C-Pen scanners, the user can scan text with a button click and then send this text to the teachers or student device. It uses optical scanner recognition.

VII. Future trends in IoT

In future, attendance could be recorded automatically; sensors can be used to measure students' brain activity. According to IDC (International Data Corporation) the market of IoT solutions worldwide is expected to reach USD 7.1 billion by 2020. Thus IoT mould the education sector to be safe and fast learning.

VIII. Conclusion

Researches are doing to design various IoT Based teaching methods. IoT will be integrated into the education system in the future.

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